



### Dropping in

About 3,000 people dropped in on the JSC Picnic Saturday, including sky diver David Grover. Photos on Page 3.



### Co-op Job Fair

Student workers from across the center gathered at the Gilruth last week for the Co-op Job Fair. Photo on Page 4.

# Space News Roundup

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No. 19



JSC Photo by Scott Wickes

With the newest space shuttle in the fleet as a backdrop, Deputy Space Shuttle Program Director Leonard Nicholson speaks to some of the estimated 10,000 people who traveled to Ellington Field to get close to Endeavour. Cars lined Highway 3, as people stopped for a glimpse of the orbiter and its new Shuttle Carrier Aircraft during an extended fly over.

## Endeavour takes bow in Houston

America's newest space shuttle, Endeavour, blew into town this week and was greeted by an estimated 10,000 well-wishers at Ellington Field.

The JSC employees and Houston residents who took advantage of the chance to get close saw the shiny Endeavour as they'll probably never see it again—unscarred by the torturous heat of reentry. They also got a close look at NASA's new Shuttle Carrier Aircraft, which was making its maiden ferry flight.

"At a time when it's very important, the shuttle orbiter here was produced on schedule and within cost," said JSC Director Aaron Cohen. "And the 747 was modified and produced ahead of schedule and below cost. So, two fantastic jobs done by a lot of people."

Orbiter Project Manager Dan Germany said Endeavour represents a \$1.5 billion investment in the future, and that it cost about \$50 million less than was originally forecast.

"We seem to live in a world of broken promises, of people saying they are going to do one thing and doing something else. . . . The Endeavour vehicle. . . is a symbol of doing just the opposite of that, of making a goal, committing to it and bringing it through."

Astronaut Pierre Thuot, who will fly aboard Endeavour Please see ENDEAVOUR, Page 4

## Two JSC contractors Low Trophy finalists

Two JSC contractors are among the eight finalists chosen to compete for the 1991 George M. Low Trophy — NASA's quality and excellence award.

Computer Sciences Corp.'s Applied Technology Division and Unisys Space Systems Division, both of Houston, are among those being considered for the award that recognizes outstanding achievements in quality and productivity improvement and total quality management.

The other finalists are EG&G Florida Inc., Kennedy Space Center, Fla.; Grumman Technical Services Division, Titusville, Fla.; Honeywell Inc., Space and Strategic Systems Operations, Clearwater, Fla.; Thiokol Corp. Space Operations, Brigham City, Utah; and TRW Space and Technology Group, Redondo Beach, Calif.

Key goals of the award, which recognizes NASA's prime contractors, subcontractors and suppliers, are to internalize quality and produc-

tivity practices and TQM processes throughout NASA and the agency's contractors and to transfer performance improvement methods of the award recipients to others.

George A. Rodney, NASA associate administrator for the Office of Safety and Mission Quality, announced the finalists after a six-month review process by the Low Trophy Evaluation Committee. NASA's TQM Steering Committee will make the final selection.

NASA Administrator Richard H.

Truly will announce the award recipient(s) at the eighth annual NASA/contractor conference on Nov. 6, 1991. There is no limit to the number of awards that can be given.

"The award applications are more numerous and getting better each year, making the job of the committee very difficult," Rodney said. "Awards are made in two categories, large and small business. There are no small business finalists this year."

Truly last October renamed the

NASA Excellence Award the George M. Low Trophy to honor the former Apollo Spacecraft Program manager.

JSC contractors have won the quality award three out of the past five years. Rockwell Space Systems Division, Downey, Calif., won last year's Low Trophy. Other previous JSC contractor winners were Lockheed Engineering and Sciences Co., Houston; and IBM's Systems Integration Division, Houston.

## Discovery crew achieves ambitious mission goals

Discovery and its seven-man crew completed one of the most complicated space shuttle missions to date Monday with an unplanned landing at Kennedy Space Center.

After eight days in orbit, Commander Mike Coats set down on Shuttle Landing Facility runway 15 at 1:55 p.m. CDT Monday, ending an 8 day, 7 hour, 22 minute and 21 second flight. The landing was moved from Edwards Air Force Base, California, because of strong crosswinds.

Crew members were reunited with their families at Ellington Field about 11:15 p.m. that night, and were cheered by friends and co-workers.

"There have been a lot of times in the last 12 to 18 months when I wondered if we could ever pull this off," Coats said.

"Everybody involved in this mission and this space program did one heck of a professional job. These guys worked and worked and worked up there to the point that they were really getting tired. We were ready to come home today."

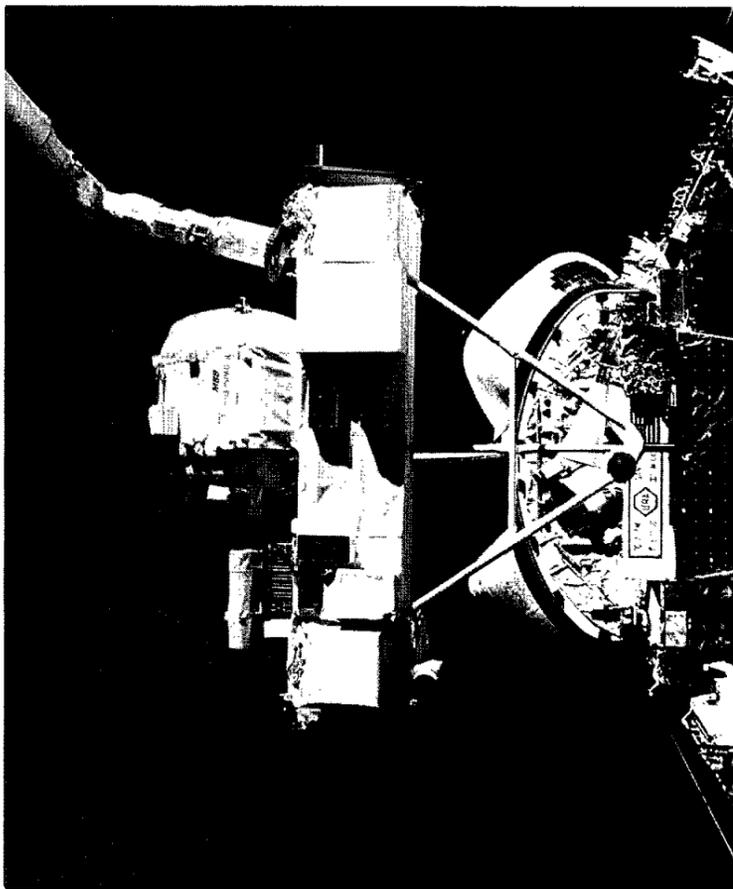
Col. John Armstrong, deputy mission director for the Department of Defense, said officials were "elated" with the overall success of the flight.

That success was demonstrated by the completion of 32 of 33 Priority 1 experiments, 18 of 21 Priority 2 experiments and 41 of 44 Priority 3 experiments, he said.

Those Strategic Defense Initiative experiments included the first ever plume observations outside the Earth's atmosphere, eight aurora observations, three chemical release observations, the equivalent of 11 airglow measurements, four Earth sweep ground disk measurements, eight Far Ultraviolet measurements, 24 Infrared Background Signature Survey observations, 10 Space Test Payload-1 experiments and the deployment of the Multipurpose Experiment Canister.

Problems with two faulty payload recorders on Air Force Program-675 at first impeded three of its experiments, but an in-flight maintenance procedure performed by Pilot Blaine Hammond and Mission Specialists Don McMonagle and Guy Bluford, allowed data to be downlinked to Earth via the shuttle Ku-band antenna.

The bulk of AFP-675's Far Ultraviolet and Horizon Ultraviolet Please see DISCOVERY, Page 4



NASA Photo

Discovery's robot arm prepares to berth the Shuttle Pallet Satellite and its Strategic Initiative rocket plume detection instruments in the payload bay. During the eight-day flight, the SPAS package collected data both while free-flying and while attached to the remote manipulator system's end effector.

## Columbia's May launch approaches

Kennedy Space Center, with a full house of four shuttles for the first time in five years, was busy this week with a practice countdown at the launch pad while another shuttle returned to Earth less than five miles away.

As Discovery touched down at KSC's Shuttle Landing Facility, Columbia's crew was aboard its spacecraft working through a dress rehearsal countdown Monday at Pad 39B. Columbia is on track for an STS-40 launch May 22, carrying the pressurized Spacelab Life Sciences-1 module in the cargo bay.

Columbia's crew — Commander Bryan O'Connor; Pilot Sid Gutierrez; Mission Specialists Jim Bagian, Tammy Jernigan and Rhea Seddon; and Payload Specialists Drew Gaffney and Millie Hughes-Fulford — completed the mock countdown with a simulated main engine cutoff near midday Tuesday. Technicians began Please see COLUMBIA's, Page 4



JSC

# Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Gift Store from 10 a.m.-2 p.m. weekdays.

- General Cinema (valid for one year): \$4.  
 AMC Theater (valid until May 1992): \$3.75.  
 Loews Theater (valid for one year, can be used two weeks after premiere): \$4.  
 Astroworld (valid 1991 season): season, \$44.94; children less than 4-feet, \$10.12; one day, \$15.85; Waterworld, \$8.15.  
 Seaworld of Texas (valid 1991 season): children (3-11), \$12.25; adults, \$17.25.  
 Six Flags (valid until Nov. 17, 1991): one-day, \$15.95; child less than 4 feet, \$14.95; two-day, \$20.95.

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# Gilruth Center News

**Sign up policy**—All classes and athletic activities are first come, first served. Sign up in person at the Gilruth Center and show a badge or EAA membership card. Classes tend to fill up four weeks in advance. For more information, call x30304.

**EAA badges**—Dependents and spouses may apply for a photo I.D. 6:30-9 p.m. Monday-Friday. Cost is \$5.

**Defensive driving**—Course is offered from 8 a.m.-5 p.m., July 13, Aug. 10, and Sept. 21. Cost is \$15.

**Aerobic dance**—Eight-week session meets 5:15-6:15 p.m. Tuesday and Thursday nights. Cost is \$24.

**Exercise class**—Class meets 5:15-6:15 p.m. Monday and Wednesday nights. Cost is \$24.

**Weight safety**—Required course for employees wishing to use the Gilruth weight room. The next class will be from 8-9:30 p.m. May 8 and May 22. Cost is \$4.

**Aikido**—Martial arts class meets for six weeks from 6:30-7:30 p.m. beginning May 14. Cost is \$30.

**Tennis**—Beginning tennis lessons will be offered for six weeks beginning May 20. Beginner-intermediate lessons will be offered starting May 22. Cost is \$32 per person.

**Country and western dance**—Six week session meets Monday nights beginning June 17. Cost is \$20 per couple.

JSC

# Swap Shop

## Property

Sale/Rent: Santa Fe, 14' x 20' steel bldg, rent at location or sell, \$6K. Larry, x30428.

Sale: Hangar, 2025 sq ft, 12' high bifold doors, 409 sq ft apt on top, Houston SW airport, all elec and plumbing, lot is 55' x 115', bldg and land, \$80K. 487-4705.

Sale: Dickinson, Dove Meadows, 3-2-2, 1800 sq ft, brick, lg screened porch, FPL, \$72K. x39182 or 534-2179.

Rent: Pipers Meadow, 2-2-2. Mike, x32255 or 480-9698.

Sale: Santa Fe, custom brick, 3-2-2, fenced on 1 restricted acre, energy-saving features, oak cab, FPL, \$124.5K. (409) 925-8760.

Lease: Galveston condo, 2-1, one block to the gulf, deco accents, all appli, FPL, covered parking, \$495/mo. 289-6777.

Sale: CLC, two story condo, 1-1.5-1CP, patio, balcony, all appli, W/D, alarm, fan, FPL, \$38K assum. 486-0508.

Rent: 2-2 condo, FPL, near JSC, \$545/mo. 282-8962.

Lease: CLC condo, 2-1, FPL, all appli, vaulted ceilings, miniblinds, pools, storage, W/D conn, \$475/mo. x31275 or 486-0315.

Lease: Nassau Bay, 4-2-2, 2000 sq ft, 2 living areas, newly redecorated, deck, 1.5 stories, \$1100/mo. Minn, 484-4944 or 333-6806.

Rent: Lake Travis cabin, private boat dock, CA/H, fully furn, accom 8, wk/day, \$425/\$85. 474-4922.

Sale: Lake Livingston, Waterwood, 2 story, 1/4 acre wooded cul-de-sac, CA/H. Robert Kline, 523-3185.

Lease: Nassau Bay, 4-2-2, near JSC, no pets, 2 living areas, newly redecorated, deck, 1.5 stories, 2000 sq ft, \$990/mo. 333-6806 or 484-4944.

Lease: Webster/Ellington, 2-1, W/D, pool, extras, \$460/mo. Dave, x38156 or Herb, x38161.

Sale: Friendswood custom 3-2-2D, landscaped, decking, trees, atrium, FPL, whirlpool in master, \$87K. 482-2138.

Sale: Bay Glen, 3 BR w/study, marble and ceramic floors, mid \$120s. 486-3977.

Sale: El Dorado Trace condo, 1-1.5-CP, all appli, patio, balcony, FPL, fans, designer WP and carpet, assum w/approval. Joyce, 286-1177.

Lease: 2-1.5 condo, 5 min from JSC, new paint/carpet/blinds, all appli, W/D, \$475/mo plus dep. Lori, x34718 or Mike, 554-2601.

Rent/Sale: Middlebrook, 3-2-2, FPL, wood and ceramic floors, patio, 10 min to JSC, \$800/mo rent, \$89K assum mort. x45118 or 286-9132.

Rent: Condo, 2-2, W/D conn, FPL, refrig, nonsmoker, no pets, avail June 1, \$510/mo. x38889 or 480-1340.

Rent: Galveston condo, furn, sleeps six, Seawall Blvd and 61st, cable TV, pools, wkly/wknd/dly rates. Magdi Yassa, x38470 or 486-0788.

Rent: Nassau Bay townhouse, 4-2-2, over 2000 sq ft, master dwn, huge garage, 2-story, FPL, deck, atrium, \$1095/mo. Jerry, x38922 or 488-5307.

Sale: Pipers Meadow, 3-2.5-2, formal LR/DR, FPL, loft, wet bar, fans, gar door opener, deck, landscaped, new paint, 15 min to JSC, \$90K. Dennis, x34405 or 480-5076.

Sale: Two water view lots near NASA, \$38.5K ea; bayfront lot on Tidwell, \$125K. Don, x38039.

Sale: Camino South, 3-2-2A, new roof, trees, brick accent wall, FPL, lg kitchen w/island, oak cab, ceramic tile, lg Saffillio tile patio w/trellises, Jacuzzi, \$77K. x33335 or 326-2582.

Sale: 71 mobile home, 14' x 66' box, 3-1, partial plywood floors, new carpet/paint, storm windows, ex cond, \$5000. 339-1337.

## Cars & Trucks

'79 Ford Pinto, yellow, std, 69K mi, A/C, new tires, \$1200 OBO. 781-0818 or 282-4271.

'86 Buick Regal Ltd, V8, 2 dr, all pwr, ex cond, 70K mi, \$4600 OBO. 282-4041 or 337-2318.

'81 VW Rabbit, diesel, 2 dr, 70.5K mi, 4 spd,

AM/FM, \$1800. x30262 or 488-1830.

'87 Toyota MR-2, 33K mi, white, 5 spd, sunroof, spoiler, ex cond, \$11.5K OBO. Mike, 283-5579 or 332-1617.

'68 Dodge Dart, 170 slant six, PS, AT, new tires, rebuilt eng, new starter, good cond, \$400 OBO. 280-2510 or 486-4439.

'84 Nissan 300ZX, 2+2, 5 spd, silver blue, 66K mi, A/C, T-tops, pwr windows, AM/FM/cass, \$6000 OBO. x37546 or 480-1937.

'85 Dodge Omni GLH Turbo, red, A/C, AM/FM/cass, 5 spd, 73K mi, \$1800. Bob, x32350 or 331-5069.

'87 Ford Tempo GL, blk w/red int, 4 dr sedan, 75K mi, ex cond. 538-1051.

'81 VW pickup diesel, fuel saver, ex cond, new tires. Bitsey, x34834 or 946-6451.

'89 Nissan 240SX, pwr pkg/HUD pkg, 19K mi, \$15.5K OBO. 488-0929.

'78 Dodge motor home, R7F, STV, A/C, water hookup, elec, ceiling damage, sleeps 2-4. Bill, x35153 or 482-3005.

'85 Honda Civic, 4 dr sedan, 72K mi, 5 spd, good cond, \$3000. Elizabeth, x37270 or 996-9705.

'78 Camaro, looks and runs good, \$1395. 333-6671 or 332-9105.

'80 Honda Accord, 2 dr, grey, good cond, \$1000. Paul, x31883 or 532-1516.

'84 Buick Park Ave, loaded, ex cond, low mi, \$4995. x30693 or 996-9157.

'88 Mitsubishi Precis, 5 spd, 3 dr, AM/FM/cass, new tires, good cond, \$3500. 333-7020 or 482-2342.

'85 Jeep CJ-7, red, blk hard top/bikini top, 6 cyl 5 spd, A/C, pwr steering, AM/FM/cass, 59K mi, \$6500. 470-0777.

'82 Chevy Suburban, Silverado, dual A/C, AM/FM/cass, new trans, 79K mi, \$4000. x30186.

'85 Ford Tempo GLX, 5 spd, loaded, ex cond, 44K mi, \$3200. 283-5728 or 480-5690.

'67 Dodge camper van, V8, \$750. Bill, x39029.

'88 Ford Mustang LX hcbk, V8, auto, OD, all pwr, A/C, cruise, AM/FM/cass, custom wheels, handling pkg, alarm, 14K mi, \$8475. 482-1535.

'80 Fiat Spider convert, 61K mi, white w/blue int, new paint/tires, ex cond, \$300. Mark, 474-2195.

'89 Ford Probe GT Turbo, ex cond, many extras, \$10,895. Dan, 280-2780 or 457-2850.

'82 Pontiac Bonneville wagon, ex cond, all pwr, cruise, tilt, AM/FM/cass, V8 diesel, A/C, \$1300 OBO. Glenn, x38067 or 484-4709.

## Cycles

'84 Kawasaki GPZ 750, 8.5K mi, ex cond, \$2000. Shannon, x32646 or 484-5412.

'86 Honda 700 Magna, 7500 mi, ex cond, 2 helmets, \$2600. x38174 or 996-9526.

'81 Honda 750 custom Windjammer, radio, low mi, good cond, runs great, \$500. Bruce, 485-0396.

'83 Suzuki RM80, new top end, good beginners' bike, \$300 OBO. 532-3395.

Lady's Vista bicycle, 3 spd, \$75; 20" boy's Schwinn Thrasher bicycle, \$50. 283-5465 or 332-1725.

Schwinn tandem bike, good cond, \$250 OBO. 335-4204 or 286-1212.

## Boats & Planes

Evinrude 25 hp, elec start, new, \$1400. Jerry Craig, 283-5311 or 420-2936.

Boat slip on Clear Lake w/roof and motorized boat hoist for pwr boats, \$125/mo. 474-4922.

'88 19' Sea Ray, I/O V6, 175, Bow Rider, 70 hrs on boat, extras incl, \$9500. 485-0396.

'83 Reneken 18' sailboat, roller furling jib, 4 hp aux, galv trlr, sleeps 4, good cond, \$4000. 339-3476.

'88 Chaparral 178XL, 17', 130 hp Mercruiser, galv Shoreland'r trlr, extras, under 20 hrs use, \$8100. 335-8553 or 280-0331.

O'Brien Sensation windsurfer, current mod, 12', complete w/mast, sail, boom, etc, ex cond, \$300. Karen, 335-4344 or 280-9403.

Center console 24', twin 150 Merc OB, new

## Today

**Cafeteria menu**—Special: tuna and salmon croquette. Entrees: pork chop with yam rosette, Creole baked cod. Soup: seafood gumbo. Vegetables: Brussels sprouts, green beans, buttered corn, whipped potatoes.

## Monday

**NCMA class**—The National Contract Management Association and University of Houston-Clear Lake will sponsor a course in contract law from 8 a.m.-4 p.m. May 13 and 14 at UHCL, Rm. 2-532. Cost is \$100 per person. Ron S. Perlman, manager of the Federal Contracts Section for the Porter, Wright, Morris and Arthur law firm in Washington, D.C., will teach. For more details, contact Jean Stell, UHCL, at 283-3122 or 283-3120.

**Cafeteria menu**—Special: Italian cutlet. Entrees: braised beef ribs, chicken a la king, enchiladas with chili. Soup: cream of broccoli. Vegetables: navy beans, Brussels sprouts, whipped potatoes.

## Tuesday

**Cafeteria menu**—Special: stuffed cabbage. Entrees: turkey and dressing, round steak with hash browns. Soup: beef and barley. Vegetables: corn cobbette, okra and tomatoes, French beans.

## Wednesday

**Cafeteria menu**—Special: pepper steak. Entrees: catfish with hush puppies, roast pork with dressing.

Soup: seafood gumbo. Vegetables: broccoli, macaroni and cheese, stewed tomatoes.

## Thursday

**AIAA symposium**—The American Institute of Aeronautics and Astronautics will co-host the 16th annual Technical Symposium at 8 a.m. May 16 in the University of Houston-Clear Lake Bayou Bldg. The theme will be "Challenges of the '90s." John Young, JSC special assistant to the JSC director for engineering, operations and safety, will speak at 8:30 a.m. on "The First 10 Years of Space Shuttle Flights." Dr. Hans Mark, chancellor of the University of Texas system, will speak at 3:50 p.m. about "The Human Exploration of the Solar System." Cost is \$2 for AIAA members, \$3 for non-members. For more information contact Alan Shinkman at 333-7508.

**Cafeteria menu**—Special: chicken fried steak. Entrees: beef tacos, barbecue ham steak, Hungarian goulash. Soup: turkey and vegetable. Vegetables: spinach, pinto beans, beets.

## May 17

**Cafeteria menu**—Special: tuna and noodle casserole. Entrees: liver and onions, deviled crabs, roast beef with dressing. Soup: seafood gumbo. Vegetables: whipped potatoes, peas, cauliflower.

## May 22

**NSS conference**—The National

Space Society will host the 10th annual International Space Development Conference May 22-27 at the Hyatt Regency on the Riverwalk in San Antonio. The theme is "Space: A Call for Action." For more information, call Steven Shepard at (512) 520-4821 or Beatrice Moreno at (512) 522-2260.

## May 23

**NCMA meets**—The National Contract Management Association Space City Chapter will recognize the "Contract Manager of the Year" at a luncheon meeting 11:30 a.m. May 23 in the Gilruth Center ballroom. Outstanding managers in the aerospace industry have been nominated by their peers and will be honored at the luncheon. Cost to non-NCMA members is \$7. The luncheon will be held in conjunction with National Contract Manager's Week May 6-10. This year's theme is "Contracting for a Competitive America."

## May 27

**Memorial Day**—Most JSC offices will be closed May 27 in observance on the Memorial Day holiday.

## May 28

**BAPCO meets**—The Bay Area PC Organization (BAPCO), the local personal computer users group, will meet at 7:30 p.m. May 28 at the League City Bank and Trust. For more information contact Earl Rubenstein, x34807 or Tom Kelly, 996-5019.

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'80 Honda Accord, 2 dr, grey, good cond, \$1000. Paul, x31883 or 532-1516.</



# An Old-Glorious Affair

**T**he skies cleared, the ground dried and the Sun came out for "A Stars and Stripes Picnic" at the Gilruth Center on Saturday.

More than 3,000 people turned out for the annual JSC Picnic that featured everything from a double-dip dunking tank to pony rides. Clockwise from above left:

- 1) Adults got a big kick out of the picnic, including would-be Rockettes Sandy Griffin, Estella Gillette and Mary Lee Meider;
- 2) Children such as the one above wore some of the biggest smiles, but they wore more than that on their faces after a visit to the face-painting artist;
- 3) Toward the end of the day, the fun just became

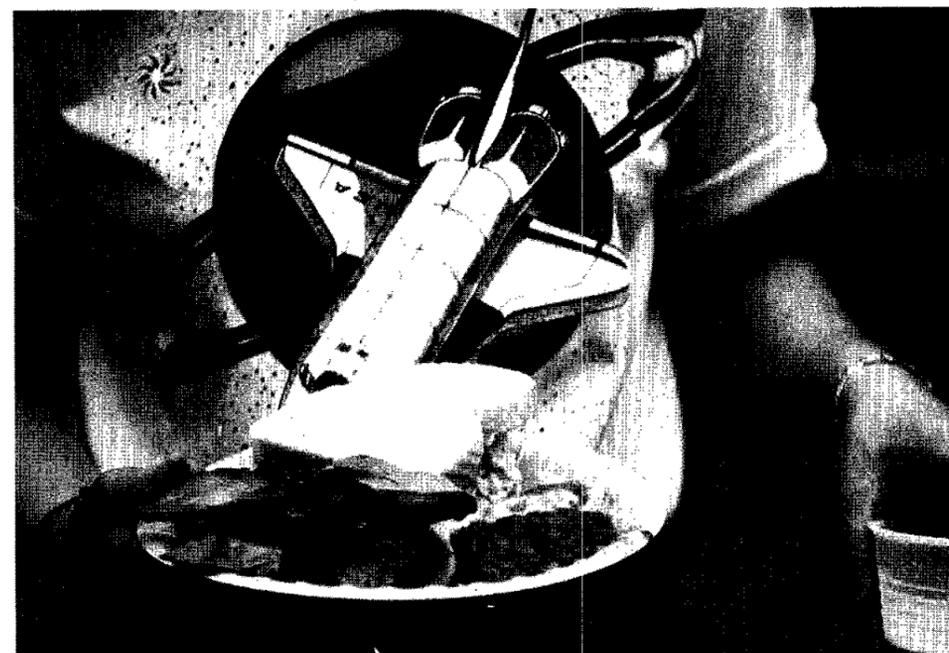
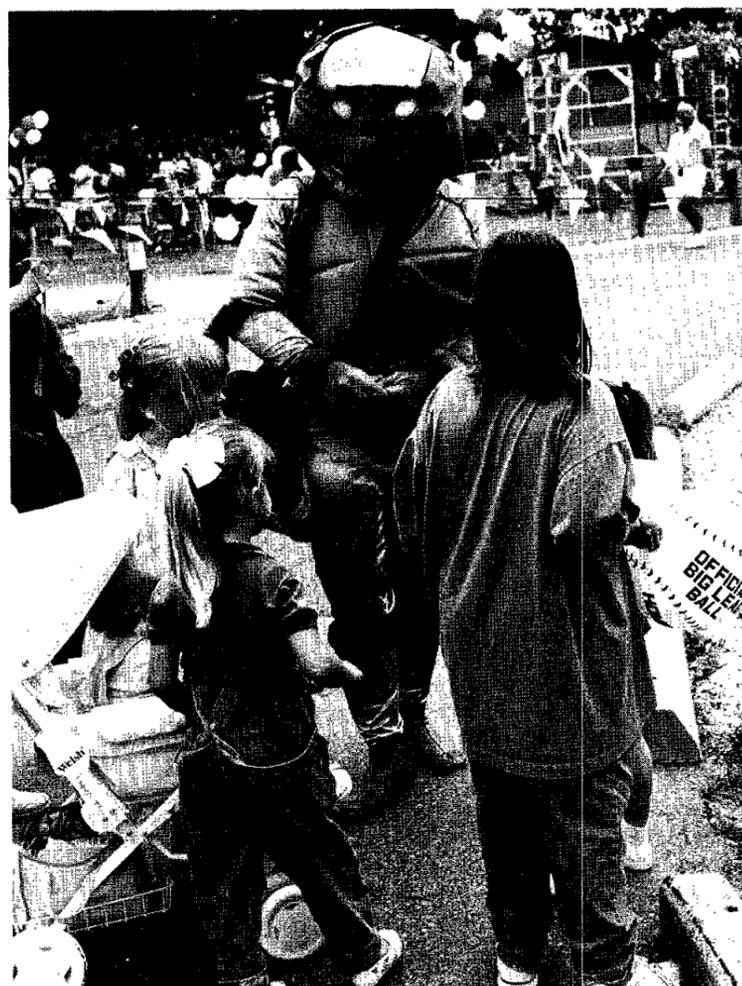
too much for some folks, and they settled down for a post-barbecue nap in the shade;

4) "Deuces Wild," a local barbershop quartet, entertained;

5) Plates were piled high with barbecue, beans and potato salad after hungry picnickers wound their way through the food tent;

6) Celebrities were a big draw for the children, including the Teenage Mutant Ninja Turtles and the Astroworld characters; and

7) Competition in the horseshoe throwing tournament was fierce, with every contestant trying to get a leg up on the competition. Magician and stilt-walker "Mike T" went to greater lengths than most.



Photos by Dale Martin and Gregg Gelmis

# Astronaut Cleave leaves for environmental project

*Will study biological mass in oceans, global warming while at Goddard Space Flight Center*

By Barbara Schwartz

Astronaut Mary L. Cleave will become deputy project manager for SeaWiFS, Sea Viewing Wide Field Sensors, at NASA Goddard Space Flight Center next week.

SeaWiFS is a joint NASA and commercial project to learn about the biological mass in the ocean. By studying the chlorophyll content, scientists hope to determine how much plankton is produced.

Information on whether plants in the ocean can absorb enough carbon dioxide and produce the oxygen necessary to prevent global warming will be a focal point for this research.

One tool the researchers will use is an eight-channel camera for data collection launched on a Pegasus booster deployed from an aircraft.

"Earth observations experience I

gained as an astronaut will be beneficial to me in this new capacity," Cleave said. "I'm eager to have this opportunity to make a contribution to environmental research."

Cleave has flown on two space shuttle missions. During STS-61B, three telecommunications satellites were deployed and two six-hour "spacewalks" were conducted to demonstrate Space Station Freedom construction techniques.

Cleave controlled the shuttle's robot arm. On STS-30, crew members successfully deployed the Magellan Venus exploration spacecraft and performed numerous middeck experiments.

"We are sorry to see Mary leave JSC but are happy that she will stay in the NASA family. We wish her success in her new job," Director of Flight Crew Operations Donald R. Puddy said.



Mary Cleave

## Mayor to address Women's Program annual luncheon

By Pam Alloway

This year's Federal Women's Program observance will be a luncheon program featuring Houston's mayor as the keynote speaker.

The luncheon and the following program will revolve around this year's theme, "Paths to Power: Women in Leadership Roles." Organizers expect between 400 and 450 people will attend the event.

Houston Mayor Kathy Whitmire will give the keynote address. The luncheon will begin at 11:30 a.m. May 20 in the Gilruth Center Ballroom. Whitmire will present an Equal Opportunity Award to the JSC manager, supervisor, or employee who has demonstrated outstanding individual initiative,

ability, accomplishments, and exceptional performance, as well as having made the most contributions toward the advancement of women.

Luncheon tickets are \$7.25 and must be purchased by Wednesday from one of the following FWP working group members:



Kathy Whitmire

Bridget Guidry, x32277; Rhonda Moore, x35282; Dawn Ward, x39532; Katie Nguyen, x33185; Janice Fearer, x37735; Marilyn Lindstrom, x35135; Lupita Garcia, x34041; Natalie Saiz, x33035; Suzanne Larkin, 283-5558; Carla Burnett, x32705; or Freda Marks, x30603.

All JSC employees and contractors are invited.



JSC Photo by Mark Sowa

**MEET THE BOSS**—Co-ops Stephanie Madsen, left, and Shannon Nolte meet their big boss, JSC Mission Operations Director Eugene Kranz, at last week's Co-op Job Fair. Madsen, who works in MOD's Training Division, and Nolte, who works in the Space Shuttle Ground Systems Division, put together a mockup of the shuttle flight deck for their booth. The annual get together provides a chance for student workers and their bosses to see the variety of co-op assignments.

## Astronaut candidates being sought

NASA is accepting applications for the next astronaut candidate group that will begin training in July 1992.

The cut-off date for applications is July 1, 1991. Applications received after the deadline will be eligible for consideration in the next two-year cycle.

After a six-month process that will include screening applications, interviews and medical evaluations,

selections will be announced early in 1992, and the new candidates will report to JSC in July.

There are two types of astronaut candidate positions — mission specialist and pilot. Successful pilot applicants typically have extensive piloting experience in high-performance aircraft. Successful mission specialist applicants typically have significant backgrounds in materials, earth, medical and space sci-

ences or engineering.

This year, because of the requirements of some future payloads and experiments, NASA is particularly interested in individuals with backgrounds in medical sciences and microgravity research, and materials processing.

Applicants be United States citizens. Application packages may be obtained by writing to the Astronaut Selection Office, Code AHX.

## Columbia's readiness review starts Monday

(Continued from Page 1) fueling Columbia's orbital propulsion systems Wednesday.

An official launch date is expected following shuttle managers' flight readiness review Monday and Tuesday.

A day after Discovery landed there, NASA's new shuttle,

Endeavour, arrived at KSC atop the latest shuttle carrier aircraft. Endeavour was towed to the Vehicle Assembly Building (VAB) early Wednesday. Atlantis, one month back on Earth following STS-37, is in Bay 2 of KSC's processing hangar. Checkouts of its electrical generation system, com-

munications systems, auxiliary power units and main engines are under way this week.

Discovery is in Bay 1 of the processing facility, where residual propellants and electricity-generating chemicals are being drained. The cargo bay doors are scheduled to be opened today.

## Endeavour builders put hearts, minds into project

(Continued from Page 1) on its maiden voyage in 1992, said that mission will reaffirm the importance of humans to space flight, rescuing a stranded satellite and testing space station technology.

"The people who put their hearts

and minds into building this shuttle did a fabulous job," he said.

"It's one of the most beautiful things I've ever seen," added Leonard Nicholson, deputy director of the Space Shuttle Program.

Dave Leestma, deputy director of

Flight Crew Operations, noted that Boeing delivered the new SCA on schedule and below cost. The maiden ferry flight crew was Ace Beall, Dave Mumme, Larry Larose, Henry Taylor, A.J. Roy, Skip Guidry and Bud Meins.

## Discovery mission sets several records

(Continued from Page 1) Program observations were a success and although the Uniformly Redundant Array overheated, enough data was returned to Earth to prove the concept of its pinhole system for imaging X-ray sources, Armstrong said.

Flight Director Rob Kelso said the shuttle tracked four objects at once, more than any previous shuttle flight, and executed a record 35 orbital maneuvering system and reaction control system translations, many of which were followed by the Shuttle Pallet Satellite and IBSS, including 20-second OMS burns only 5 seconds apart, all the while

maintaining rendezvous lock barely a mile and a half away from SPAS.

The flight also set a record for the most OMS propellant used by the RCS jets while in the interconnect mode, double that of previous flights.

Post-landing inspection showed excessive wear on the right outboard main landing gear tire, with at least three of 16 plies damaged. The cause of that wear was being investigated.

"It's a beautiful voyage, a beautiful journey we go on and working with these guys has been a real privilege," Hammond said at the welcome home ceremony. "We got a lot accomplished for this nation and

we're real proud of that fact and we're real proud of you all for helping make that possible."

"We set out with a list of objectives that was two feet thick and we came back with almost 100 percent of those objectives accomplished," added McMonagle. "The way we did that was by using a vehicle that has lots of capability and exercising just about every single capability the orbiter has."

"Each one of you made a difference," said Mission Specialist Rick Hieb. "We can do what we do because every one of you does your job as if it's the most important job in the world."

## Payload specialists chosen for microgravity mission

NASA has chosen Dr. Lawrence J. DeLucas of the University of Alabama at Birmingham and Dr. Eugene H. Trinh of the Jet Propulsion Laboratory to fly as payload specialists on the first U.S. Microgravity Laboratory mission.

USML-1 is a 13-day Spacelab mission scheduled aboard the Space Shuttle Columbia in June 1992.

DeLucas, 40, earned a doctorate of optometry in 1981 and a Ph.D in biochemistry in 1982 from the University of Alabama at Birmingham. He holds several positions at the university including associate director of the Center for Macromolecular Crystallography, professor in the Department of Optometry and adjunct professor in the Laboratory of Medical Genetics.

Trinh, of Culver City, Calif., earned a Ph.D in applied physics from Yale

in 1978. The 40-year-old Trinh previously was a backup payload specialist for Spacelab 3, a microgravity mission that flew aboard the shuttle in 1985.

During the mission, Trinh and DeLucas will conduct more than 30 scientific and technological investigations in materials, fluids and biological processes in the orbiting laboratory.

For the first U.S. Microgravity Laboratory mission, NASA has designated Dr. Joseph Prael of Case Western Reserve University, Cleveland, and Dr. Albert Sacco, Jr., of Worcester Polytechnic Institute, Mass., to serve as alternates to DeLucas and Trinh.

Prael and Sacco will be key control team members in the Spacelab Mission Operations Control facility at Marshall Space Flight Center.

## Open season for Thrift Savings

Open season for the Thrift Savings Plan begins Wednesday and will continue through July 31. Eligible employees will receive TSP information within the next two weeks.

During open season, eligible employees may elect to join the plan, terminate current contributions, change the amount of contributions or waive involvement in the tax-deferred retirement investment plan.

The effective date for elections or changes varies according to when an employee's TSP form is received by the Employee Services Section, Code AH76, Bldg. 45, Rm. 140. If the form is received by July 12, the changes will be effective July 14; received by July 26, effective July 28; and received by July 31, effective August 11.

For more information, call the Employee Services Section at x32681.

## Space News Roundup

The Roundup is an official publication of the National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, and is published every Friday by the Public Affairs Office for all space center employees.

Swap Shop ads are accepted from current and retired NASA civil service employees and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC Form 1452. Deadline is 5 p.m. every Friday, two weeks before the desired date of publication. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2. No phone or fax ads accepted.

Editor ..... Kelly Humphries  
Associate Editors ..... Pam Alloway  
Kari Fluegel